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ABSTRACT

Designed to present interesting facts about science and to heighten the curiosity of primary age students, this book contains activities about the natural world and numerous black and white illustrations. This activity book explores easily recognized animals, along with a few not-so-well-known plants. The theme of the first section is fall wildlife in the fields and includes experiments, games and art activites with wild plants and animals. Forests are highlighted in the second section. The third section explores winter wildlife through exercises on penguins, Antarctica, and on wildlife trivia. Answer keys are provided in the teacher/parent guide section. (ML)

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A GOOD APPLE ACTIVITY BOOK FOR PRIMARY GRADES

YOUNG SCIENTISTS EXPLORE

Wild Plants & Animals

BOOK 12 PRIMARY LEVEL

ED280698

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By Linda Penn Illustrated by Liz Weiser

YOUNG SCIENTISTS EXPLORE

WILD PLANTS & ANIMALS

BOOK 12—PRIMARY LEVEL

by
LINDA PENN

illustrated by **LIZ WEISER**

cover design by **VANESSA FILKINS** and **TOM SJOERDSMA**

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PREFACE

Wild animals never fail to fascinate the young child. This science activity book explores easily recognized animals, along with a few, not-so-well-known plants. Both will prove equally exciting when viewed through the eyes of a wild rabbit, the book mascot—W.C. Fields. The initials, W.C., stand for "Wild Carrot," a plant that can be found growing in just about every area of the country. This cosmopolitan member of the parsley family, lends itself naturally to a field science experience. Its flower, popularly known as Queen Anne's lace, blooms abundantly in vacant lots, as well as along roadways or wooded areas; the green, hairy stems are perfect for the "scratch and sniff" discovery test, as they definitely emit a carrot-like smell; the wild carrot seeds are "hitchhikers," catching rides in the fur of animals like our mascot, W.C., and last but not least, the dried flower head containing the hitchhiker seeds closes up tight when rain threatens. (See "Exciting Science Fun," page 8, for a wild carrot experiment that amazes both children and adults.)

The range of discovery is unlimited . . . from North Pole polar bears to South Pole penguins, from West Coast redwood trees to Eastern carrot seeds . . . the unusual and interesting habits of wildlife sharing our world will be explored. The children enter this world of wildlife by compiling their own Activity Booklet. (For a bright beginning to their booklet, reproduce their cover, page 1, on colored paper.) "Sign Up for Science," page 4, gets the activities off to a good start, introducing children to their special scientific signs, ♂ for males and ♀ for females; providing membership in the W.C. Fields' Detective Agency; and supplying each young scientist with the means to make a Nature Detective Badge. (The badge carries a large likeness of the "Agency" head, W.C., ears and all.) The children's first assignment will be "Tracking Down Wild Carrot" and other common plants with intriguing "hitchhiker" seeds. "A Wild Weed 'Bad Guy,' " page 8, is an activity which illustrates how to avoid harmful plants by paying attention to simple details. The ever popular Concentration card game, played regularly by young children, becomes a field science experience on pages 10-11, with the title, "Wild Carrot Concentration." In the nature game, the "Wild Weed Bad Guy" is a wild card and "turn stealer." (The card game should be glued to tagboard, covered with clear Con-Tact paper, and then cut out so each child can have a personal deck of Wild Carrot cards.) The final activity for this section of the book encourages children to identify animals by their coats as furry or non-furry . . . the furry animals becoming "Carrot Seed Carriers."

We then travel from the carrrot fields to the forest, moving to the music, "Sing-a-Song of Seasons," page 19, and setting the stage for some tree-leaf and seed science. Children discover why leaves seem to change colors in fall with a special art activity. They then make an "Acorn Cap" from a paper sack, to wear while testing acorns in " 'Sink or Float' to Grow an Oak," page 21. This simple experiment can guarantee the excitement of sprouting oak trees! Other fall activities like "Sky Watching Fall Flyways," page 23, foretell the coming of winter, as well-known migrators, mallard ducks and monarch butterflies are introduced, along with the beautiful snow goose and that large "prehistoric insect," the Green Darner dragonfly. Young eyes and ears will want to share the wonder of wildlife on the move.

Then winter wildlife takes the stage with penguins and polar bears leading the way. The coldest regions of the world, the Arctic and Antarctic, have a black and white wildlife story all their own . . . Arctic animals dressed in white, penguins born in the black winter night. These final pages will attempt to discover tales of survival unlike any other. Standing penguin puppets, songs, experiments and a game will increase the children's understanding of winter's wildlife wonders. These activities were created to advance the fun of learning. May you enjoy sharing **Young Scientists Explore Wild Plants & Animals**.

Your friend in science,

Linda Penn

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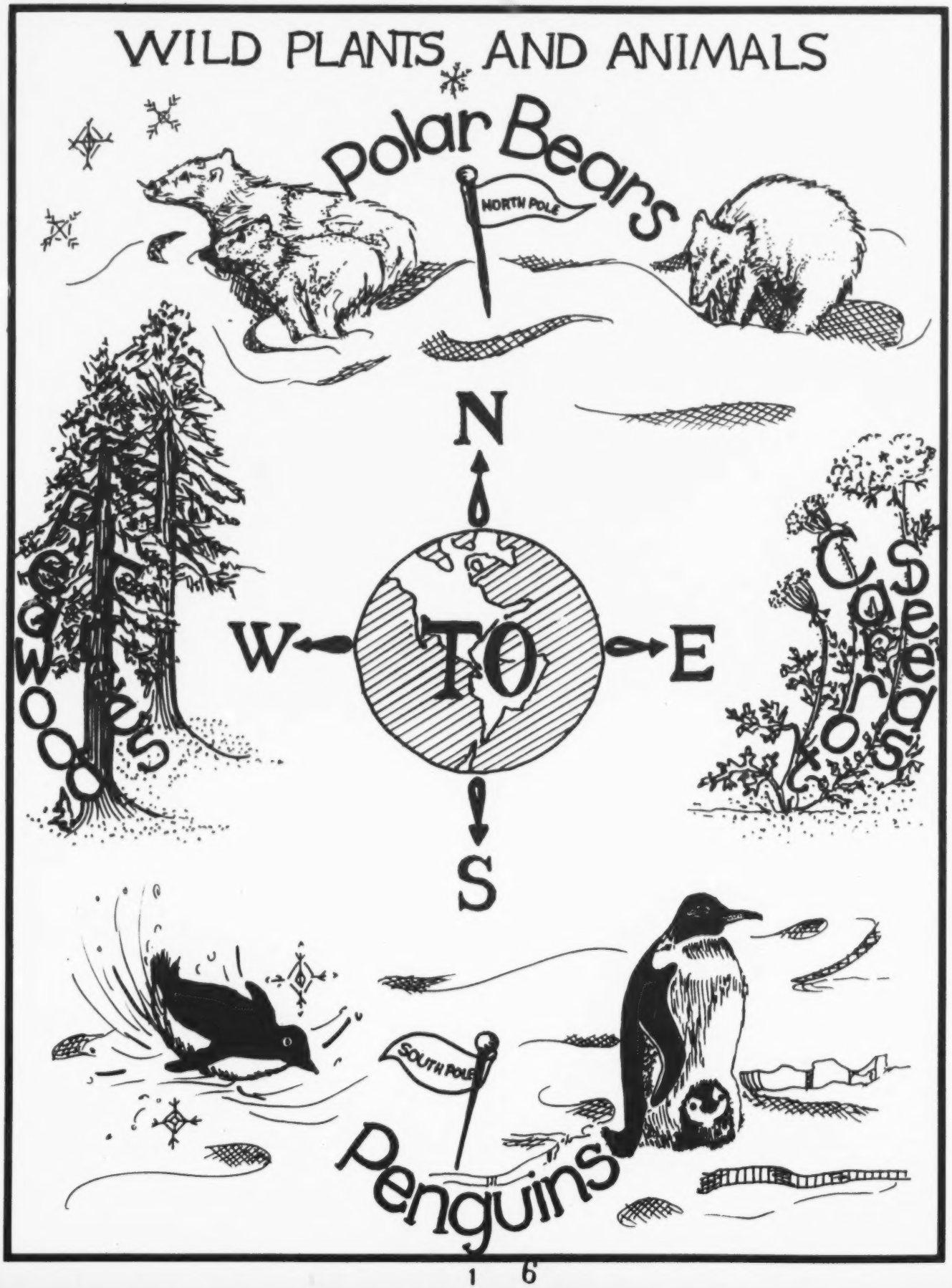
WILD PLANTS AND ANIMALS



Picture this ...

Wild plants and animals
do special things in season.

As we travel through this book,
we will explore the reasons...

_____ can lay Winter eggs

while most birds _____ in spring.

Tree _____ tell the truth in Fall

and some summer insects _____.

nest

sing

Penguins

leaves

I'm a **wild** rabbit.
You can call me "W.C."
Field plants,
like this
carrot,
really count on me.
I am so very **hairy**
with a **thick**
grey **coat**
of **fur.**

I often carry
carrot seeds,
beggar's-ticks,
and burrs.

Sign Up for Science

The W.C. Fields' Detective Agency

I need ♂♂♂ boys and ♀♀♀ girls to join me
for some science learning fun.
If you like exploring nature,
then you may be the one.

Just fill in your name right on the line.

Our special code is your science sign.

Mark ♀ if you're female and ♂ if you're male.

Now get your badge ready and let's hit the trail.

(Finish and cut out I.D. card. Glue inside badge.)

_____
(Last Name)

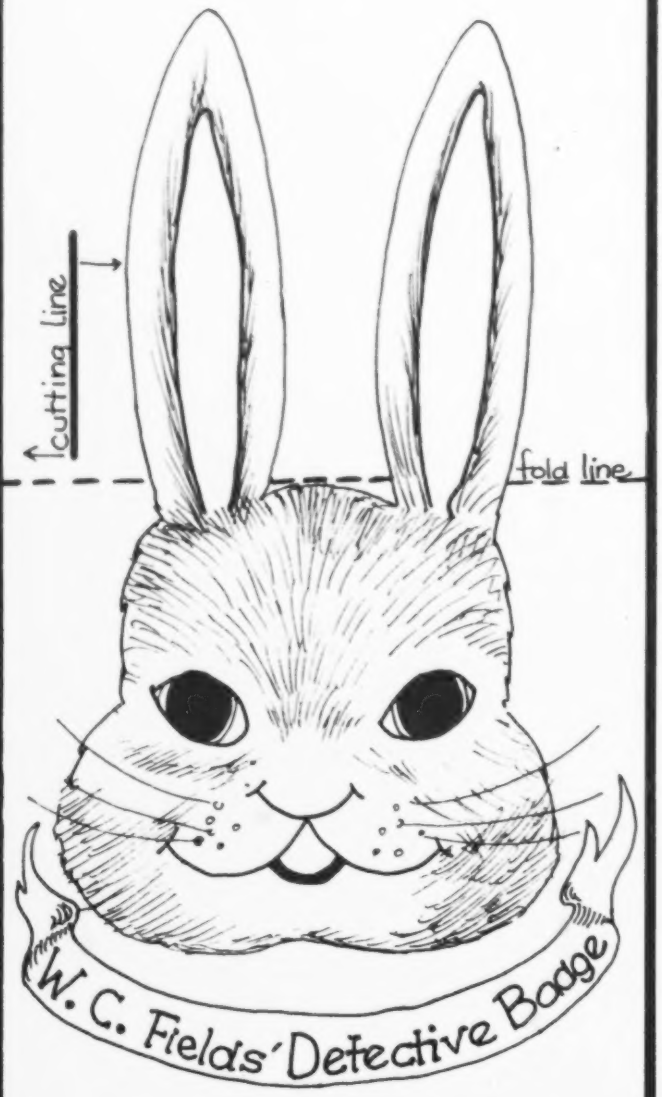
_____
(Grade Level)

Photo or Drawing for Identification

Field Identification Card

_____
(Signature)

(Sign) Nature Detective



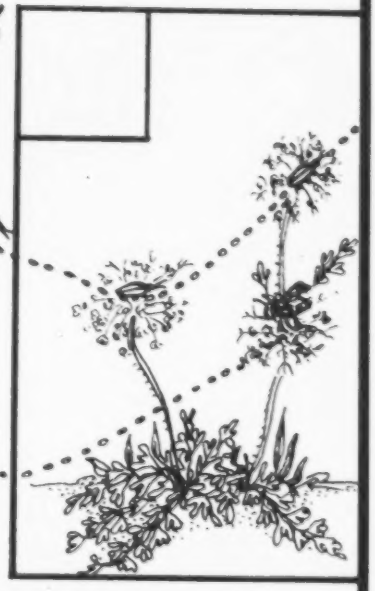
Tracking Down Wild Carrot

Carrot roots are a crunchy treat, and

taste the best.
But you can find them
growing **wild**
with my *scratch*
and sniff test.

Look for an umbrella-shaped flower that's often called Queen Anne's lace.

After many visits from beetles and bees, seeds begin showing on its flower face.



Protecting "arms"
of the wild carrot plant
enclose all the seeds
'til they're ripe.
Soon a dried flower head,
with "arms" outspread,
opens in bright

sunlight.

W. C. FIELDS' FOOT NOTE

After reading "Tracking Down Wild Carrot," number the Picture Clue Cards 1, 2, and 3. Cut out and glue to tagboard. Take the Clue Cards along when locating the flowers, leaves, and seeds of this interesting plant. Remember to scratch and sniff the green stems of Wild Carrot. W.C. says, "You can tell by the carrot smell!"

A Wild Weed "Bad Guy"

Poison Hemlock

White Flower head
loose clusters
of flowers.
Never has purple
flower in center.

Flower stem is
smooth never hairy.

Thicker leafed.
Fern-like shape-Green

Wild Carrot grows in many places. Poison Hemlock in a few. Can you spot their differences and tell between the two?

Wild Carrot Plant

White Flower head
of tiny flowers
closely packed-
often has tiny
dark purple
flower near center.

Flower stem is
always hairy.

Finely leafed
Fern-like shape-Green

Exciting Science Fun

Wild Carrot forms hitchhiker seeds. Poison Hemlock does not.

It's a fact that carrot seeds cannot stick to wet fur. So the dry flower heads of the Wild Carrot actually close up before a rain to stop seeds from falling out. Dip an opened flower head with carrot seeds in a bowl of water.

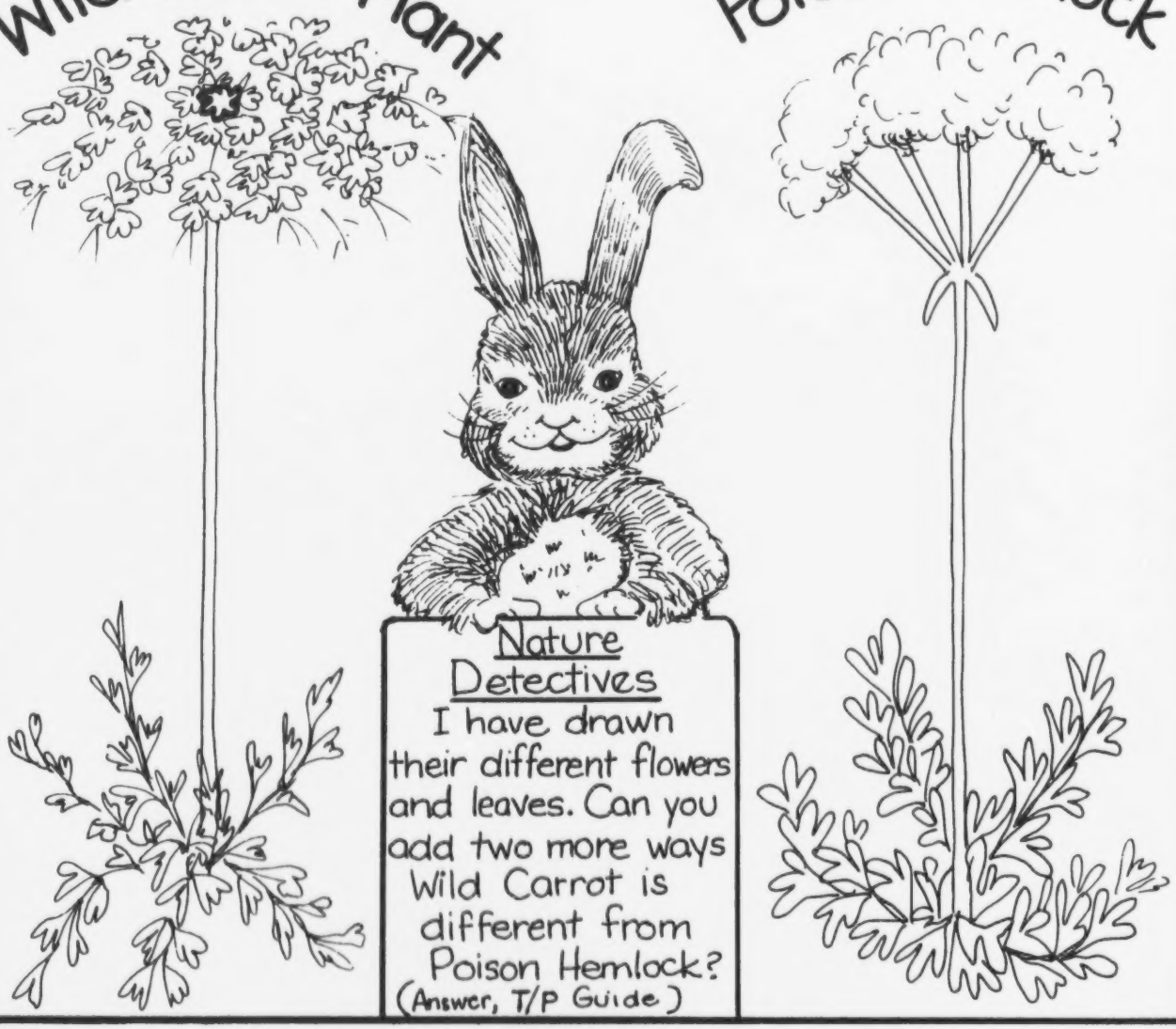
WATCH WHAT HAPPENS!

W.C. FIELDS FOOTNOTES

Here's an easy clue. The ways these plants are alike are underlined twice. Ways they are different will have a wavy line beneath.

Wild Carrot Plant

Poison Hemlock



Nature Detectives

I have drawn their different flowers and leaves. Can you add two more ways Wild Carrot is different from Poison Hemlock? (Answer, T/P Guide)

There are wild plants
that need to make poison
To protect their green leaves
and stay alive.
Without poisons, these plants
would be eaten
and not one plant like them
would survive.

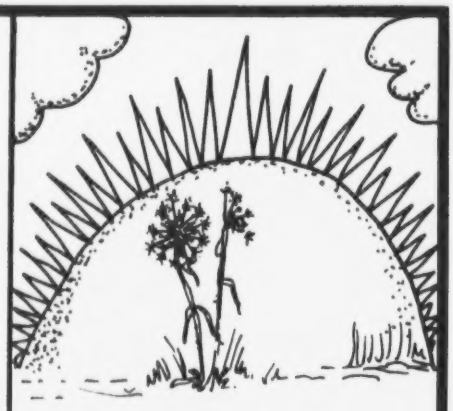
Remember, DO NOT TASTE Wild Carrot or Poison Hemlock. Wild Carrot is very bitter tasting and Poison Hemlock is extremely poisonous if eaten.

Wild Carrot Concentration

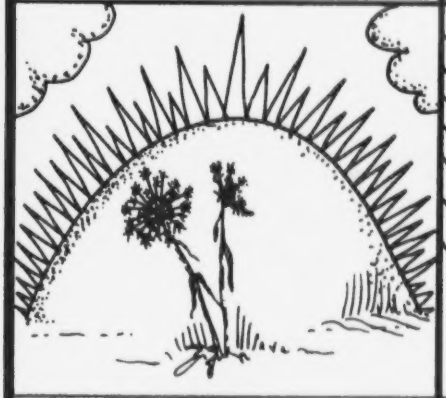
New Carrot Tops	New Carrot Tops	Young Flowers
Young Flowers	Insects Pollinating Flowers	Insects Pollinating Flowers

Seed Flowers Ripening "Bird's Nest"

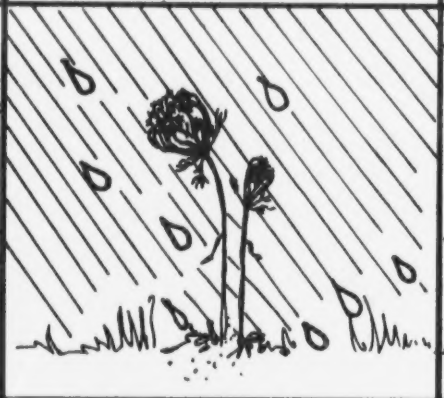
Seed Flowers Ripening "Bird's Nest"



Dried Flowers with Ripened Seeds

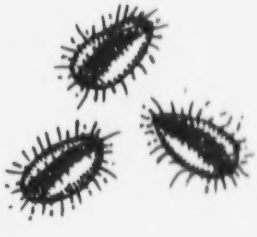


Dried Flowers with Ripened Seeds

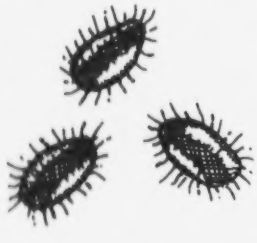


Dried Flowers with Ripened Seeds

Dried Flowers with Ripened Seeds



(Magnified) Wild Carrot Seeds



(Magnified) Wild Carrot Seeds

WATCH OUT for Poison Hemlock !

Wild Weed Walk

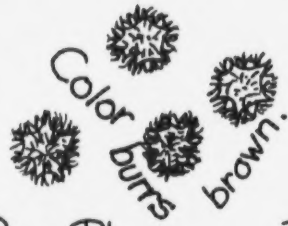
It's time to be "Seed Detectives" and explore a field in **fall.**

Try to catch these hitchhikers.

See if you can find them all.
(Don't bother to bring back burrs.)

Glue seeds here.

Wild Carrot Seed Flower



Burr Plant

Beggar's-Tick Plant
(Sometimes called Sticktights)

Glue seeds here.

Can you prove "hitchhiker" seeds stick to animal fur?
(Find the seed **"fingers"** with a magnifying glass.)

Glue "furry" material here.

Can you prove the coats of non-furry animals will not carry "hitchhiker" seeds?

Glue waxed paper here.

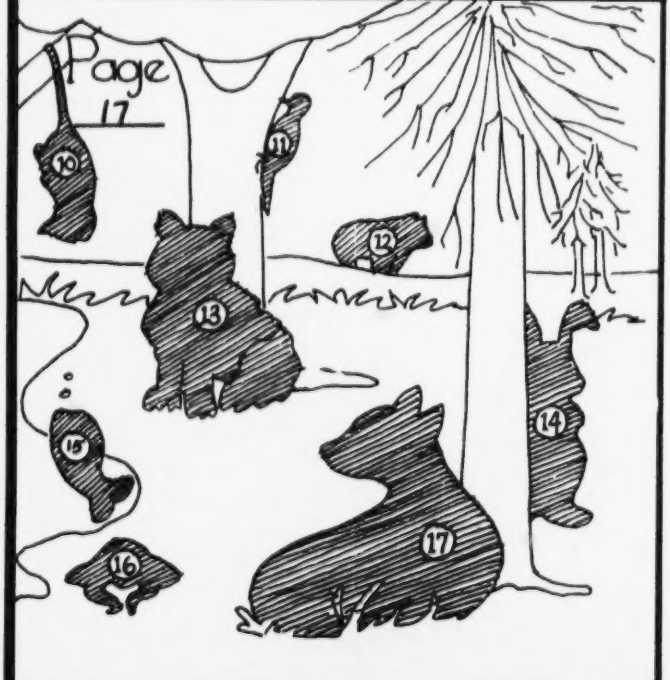
Catch a Seed Carrier

Some wild seeds
have fingers
to catch **furry** hair;
That's a ticket to travel
just about anywhere.
It's time to play my game
of Hitchhiker Seeds.
Look out for the smooth
and **furry** coats,
please !!

Match the number, shape, and name of each living thing you see.

Wild Animal Answer Key

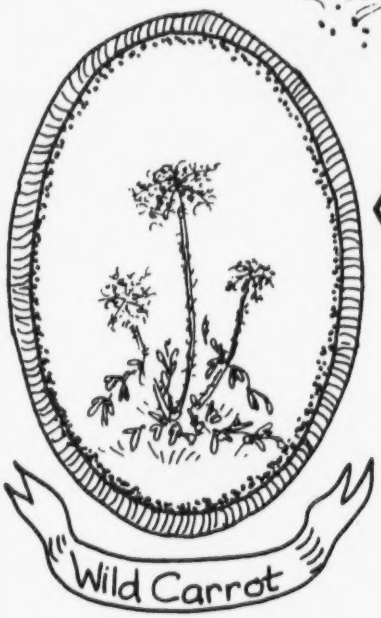
Animals pictured on pages 16 and 17.



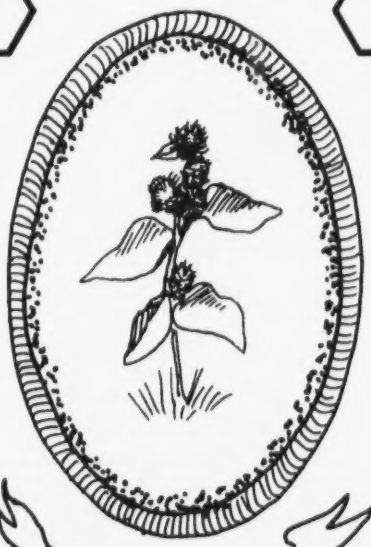
Number	Animal Name
1	beaver
○	snake
3	_____
○	turtle
○	snail
○	frog
7	_____
○	chipmunk
9	_____
○	opossum
11	_____
12	_____
○	fox
○	W.C. Fields
15	_____
○	toad
17	_____

Count Me In!

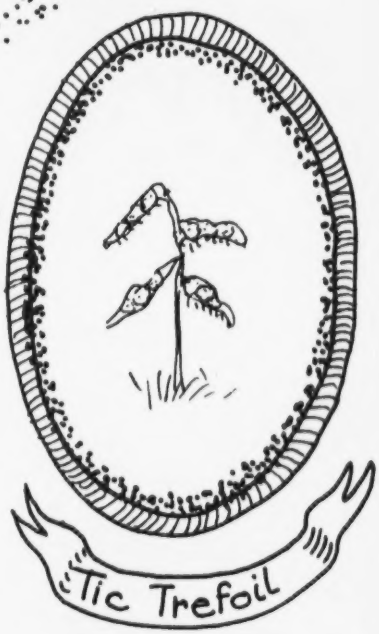
Most plants here have fur-catching seeds; "Weed Walk" through the pictures (on pages 16 and 17) and count them all, please.



Wild Carrot

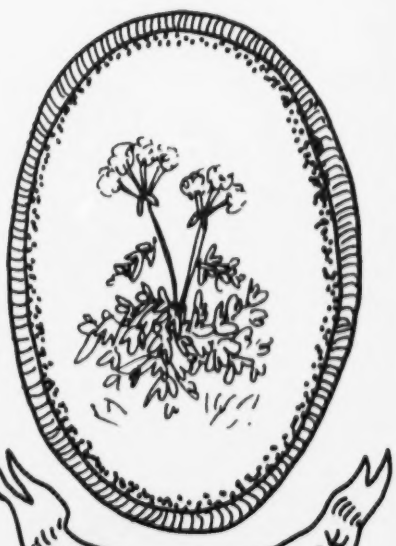


Burdock

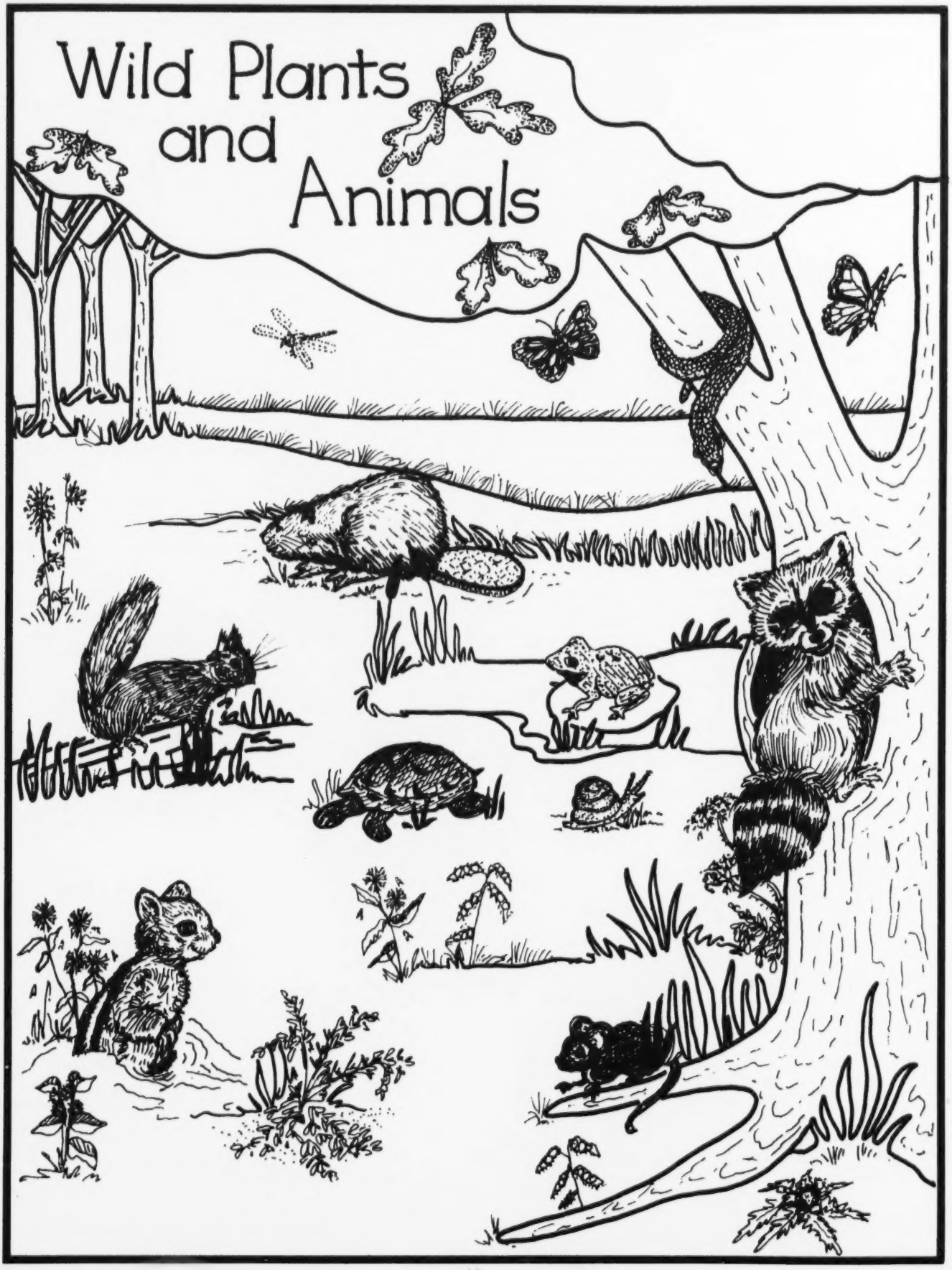


Tic Trefoil

Beggars-Tick



Poison Hemlock


Wild Plants
and
Animals

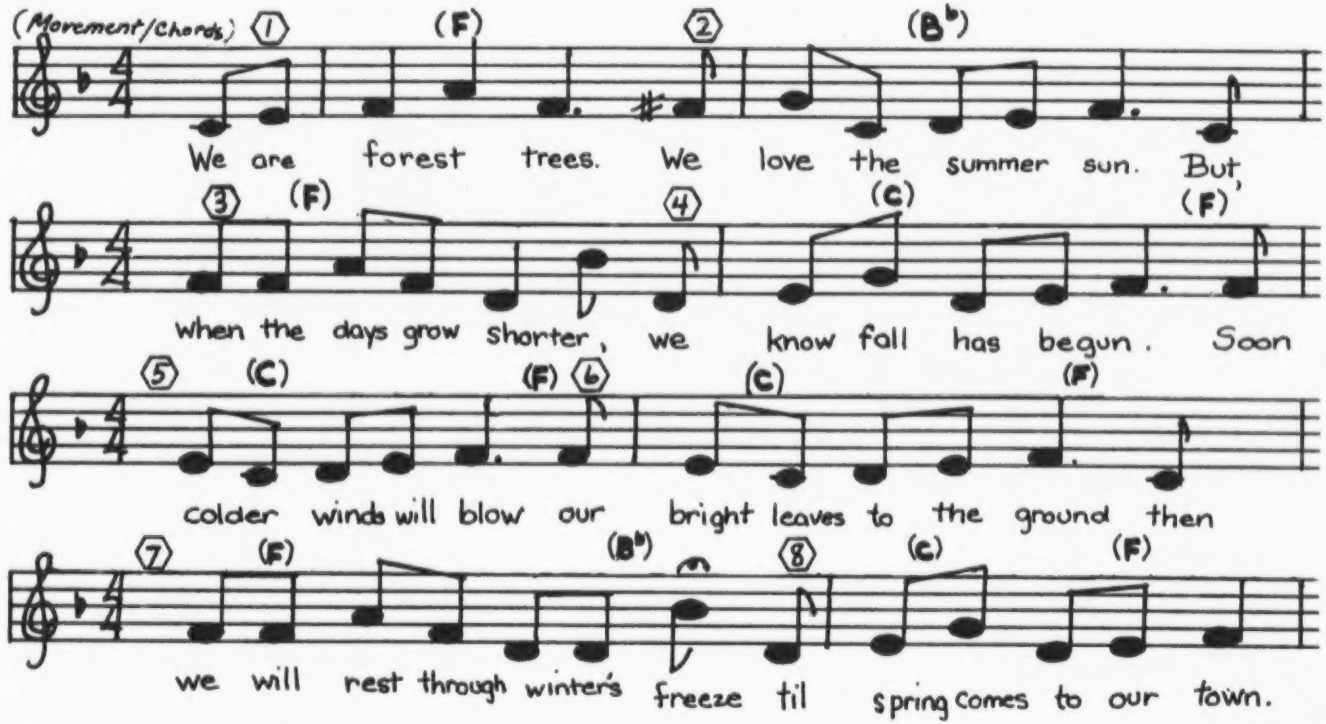
Locate the Carrot Seed Carriers

Furry Animals

Non-Furry Animals

Hitchhiker Seed Plants

Sing-a-Song of Seasons



MOVEMENT

1. Stand tall. Reach out with arms.
2. Form circle above head with hands.
3. Slowly move circle from above head, downward.
4. Shake head "yes."
5. Place hands around mouth and blow.
6. Flutter hands in downward motion to floor.
7. Remain down and rest head on hands. Shiver.
8. Stretch upward; then jump up!

Tree Food Factories

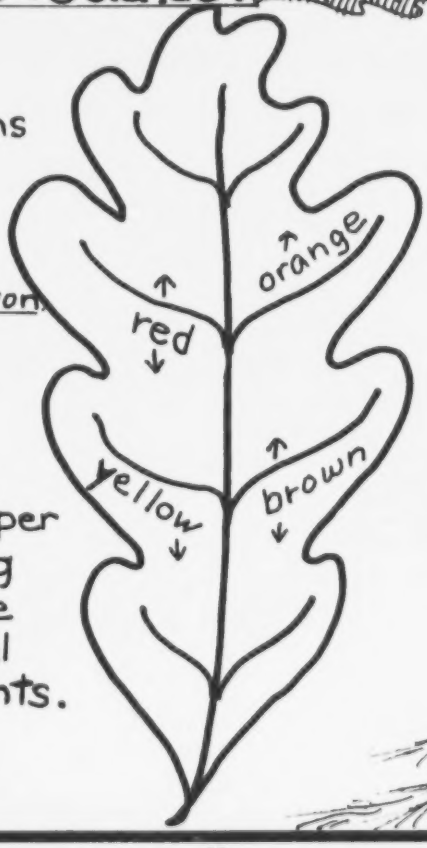
Leaves or needles
colored green
are the sign of a tree's "foodmaking."
But when the green's no longer seen,
then "a rest" the tree will be taking.
Should fall's bright colors
"paint" a tree,
those are hidden pigments that we see
Foodmaking green's a pigment, too.
When it disappears,
new colors show through!

Tree Detective Science

① Use markers to color this oak leaf's sections as indicated.

② Color over with dark green crayon. (Press hard while coloring.)

③ Place on large sheet of scrap paper before scratching away some of the green to reveal the hidden pigments.



This activity will help you remember. A leaf's true colors are hidden under the foodmaking green pigment. Can you find a real leaf showing its hidden pigments?

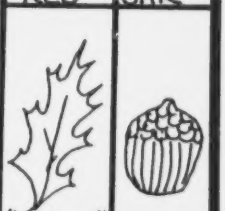
Seed Science

Some tree seeds ripen
and are ready to grow
long before the first winter snow.
If you follow these steps
you can grow your own tree,
The first step, of course,
is to find the right seed!

WHITE OAK

The long narrow acorns of the White* Oak Tree sprout quickly (about 10 days) while the shorter, rounder Red* Oak acorns take longer to ripen and may or may not grow. Both trees can be identified by their leaves; White Oak leaves will have rounded edges and Red Oak will be pointed.

RED OAK



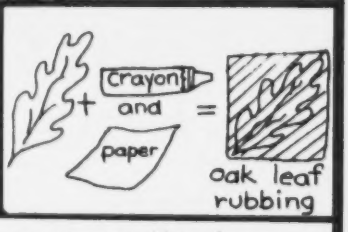
* "White" and "Red" does not indicate color in this case, but a tree family classification.

"Sink or Float" to Grow an Oak

Turn down "8x16" brown paper sack from top in 4" cuff. Gather bag bottom and twist for stem of acorn cap.

More Tree Detective Activities

Just as fingerprints can provide clues to solving a mystery, leaf prints in the form of oak leaf rubbings can help children discover these interesting trees and collect some acorns. Children should TRY THIS TEST before planting acorns. While wearing "acorn cap," have each child drop undamaged acorns, one at a time, into water. If an acorn sinks to the bottom, it is capable of growing. Floating acorns will not sprout.

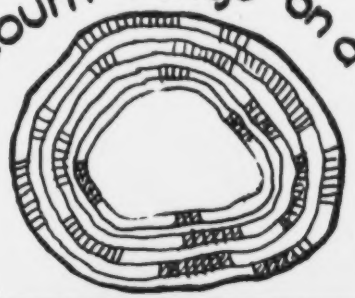


PLANT "sinking acorns" in light soil mixture; use spray container to water, keeping soil evenly moist. Place inside plastic bag in a warm dark spot, until the seeds sprout. Move to lighted area. Care for the Oak Tree Nursery as you would classroom plants. Congratulations! You should soon have green, foodmaking leaves.

Nature Tells Its Age

Can you...

Count rings on a Redwood?



DIRECTIONS: Write age in center of tree rings, fish scale, and turtle shell pattern. Fill in blanks for White Pine.

Sets of boughs around White Pine?

] Year ____

] Year _____

] Year two

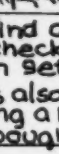
] Year one

W.C. FIELDS FOOTNOTE

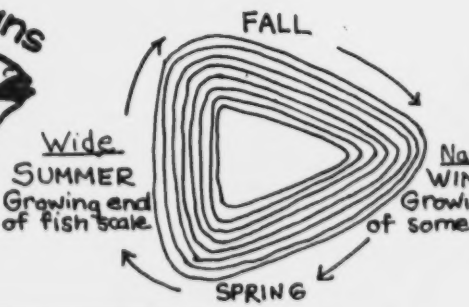
The age of trees like redwoods can be found by counting growth rings inside the tree's trunk. Redwoods may be the world's tallest, up to 370 ft. tall.

W.C. FIELDS FOOTNOTE

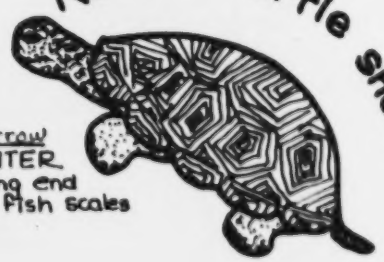
You can find a White Pine in nature by checking its needles – they grow in sets of "5." White Pines also tell their age by growing a ring of branches (boughs) each year.

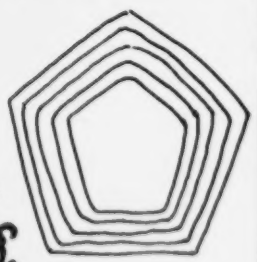


See season signs on fish scales?



Read a turtle shell for time?





W.C. FIELDS FOOTNOTE

The scales tell the story for fish; a seasonal growing ring is added each year.

W.C. FIELDS FOOTNOTE

A turtle's age is found in the ringed pattern on its shell.

Sky Watching

Fall Flyways

Spend some time in **fall** skywatching.
Flying wildlife's on the move.

♀ **Monarch Butterflies,** ♂

Monarchs are orange. The ♂ has two black spots on its wings.

Dragon fly with green body.

a **dragonfly,**

Mallard Ducks

in pairs of two

Mallard ♂ has green head.

♂

♀

Mallard ♀ is brown.

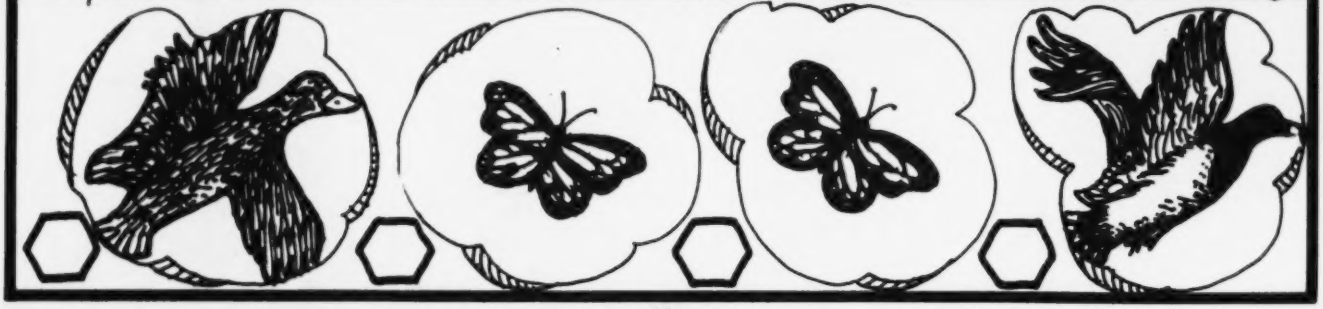
Male ♂ and female ♀, watch them go.....

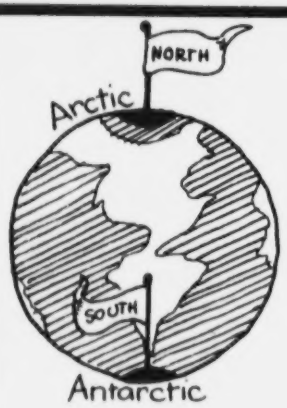
Snow Goose

Fall's migrators (MY-gray-tors) on the wing.

Flying away from **winter's freeze**
to stay farther South until **spring.**

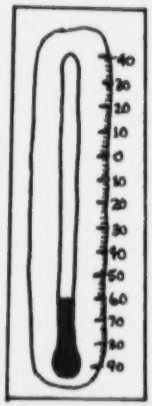
"Skywatch" here for males ♂ and females ♀; then write their science sign





Winter Wildlife

The parts of our earth
that are very **cold**
happen to be at the North and South Poles.
The North Pole is called the Arctic.
The South Pole is almost the same –
just add an "A," an "n," and "t."
(Add letters here→) ___ ___ ___arctic is its name.



Temperatures at the Poles are in
the "60" below "0" range
and both of the Poles are in **darkness**
while this very **cold winter** remains.
Although it doesn't seem possible
to come through the Polar **winter** alive,
"**wildlife wonders**"
on this North and South tundra [TON-dra, frozen land]
manage somehow to survive.

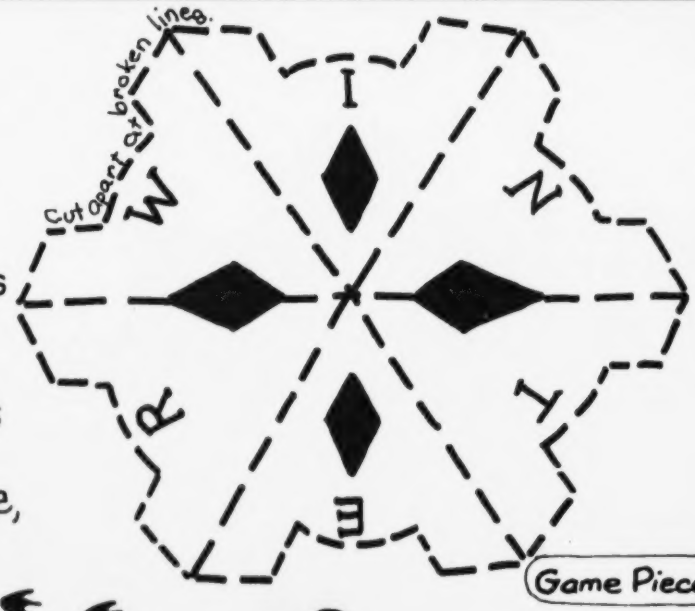
SCIENCE SAMPLER *Allow the children to check the thermometer in the home or school deep freeze. The Polar winters are colder-up to 70° below zero.*

The Arctic has **Seals,** and **Polar Bears,**
Snowy Owls, and the **Snowshoe Hare,**
an **Arctic fox,** that hunts in white, to capture food
in the dim **winter** light.

Antarctic Antics

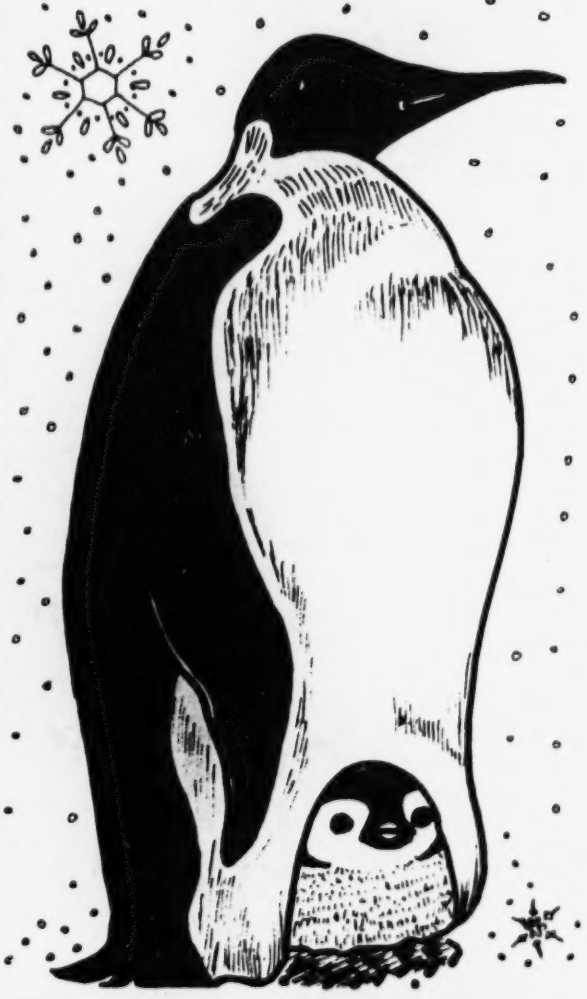
The Antarctic has Emperor Penguins.
They can be about four feet tall.
Believe it or not they hatch out their eggs
where the weather's the coldest of all.

Father penguins will spend almost 65 days
with newly hatched chicks on their feet.
For it is this long, mother penguins are gone,
catching "seafood" that all penguins eat.



Winter Wonder Birds

(Sung to the tune of "I'm a Little Teapot.")



I'm an Emperor Penguin
black and white.
I can survive
the Antarctic Night.
Covered with tiny feathers
coated just right
With lots of oil
so they're watertight.

I'm a baby penguin
black and white.
I'm under here
snuggled up tight.
Standing on my Papa's feet
(left and right)
I'll make it through
long winter's "night."

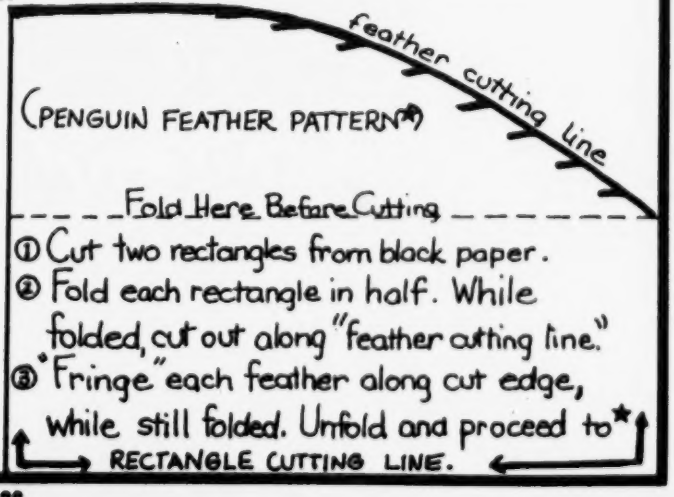
Science Detective

TO PROVE: Oil can "waterproof" by preventing water droplets from soaking into penguin feather.

Materials Needed - black construction paper, vegetable oil, water, cotton ball, and eyedropper.

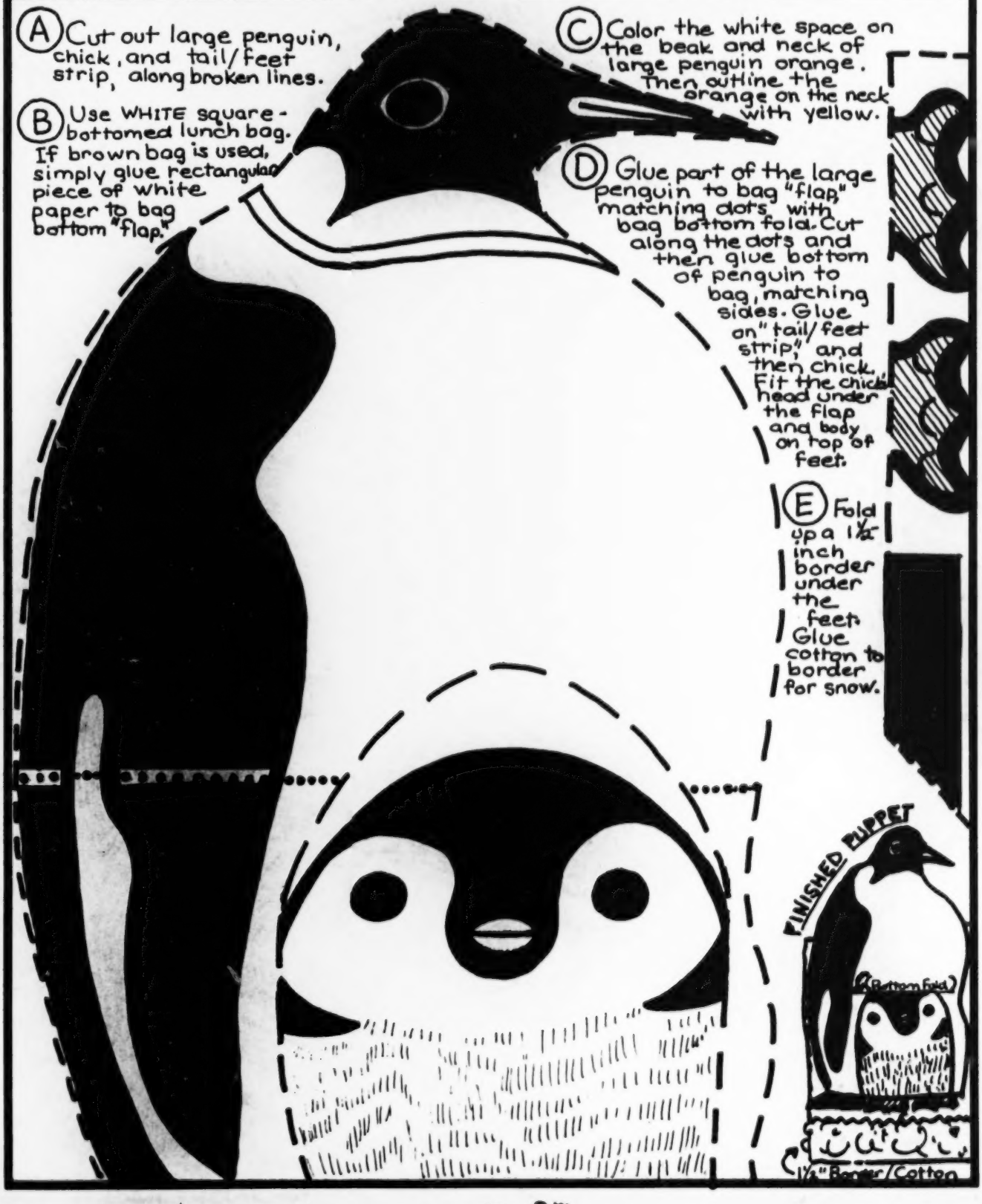
Directions - Fold and cut two "feathers" from construction paper as indicated on pattern.* Apply oil to cotton ball and rub on one feather. Use eyedropper to put water on each of the feathers.

WHICH FEATHER IS WATERPROOF?

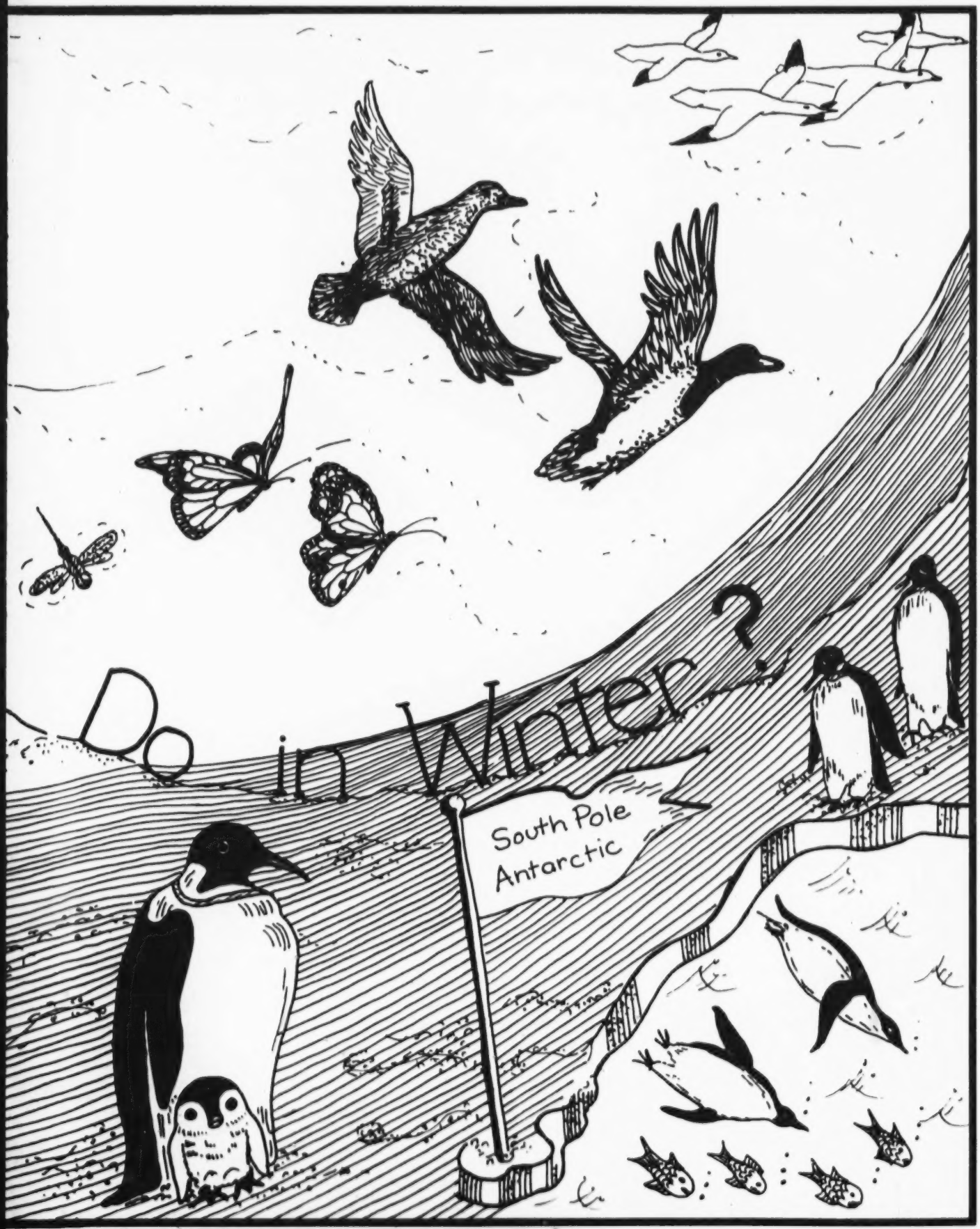

feather cutting line
(PENGUIN FEATHER PATTERN*)
Fold Here Before Cutting
① Cut two rectangles from black paper.
② Fold each rectangle in half. While folded, cut out along "feather cutting line."
③ "Fringe" each feather along cut edge, while still folded. Unfold and proceed to *
RECTANGLE CUTTING LINE.

"Standing" Emperor Penguin Puppet

Follow the steps "A" to "E" and a stand-up puppet this will be.


(A) Cut out large penguin, chick, and tail/feet strip, along broken lines.
(B) Use WHITE square-bottomed lunch bag. If brown bag is used, simply glue rectangular piece of white paper to bag bottom "flap."
(C) Color the white space on the beak and neck of large penguin orange. Then outline the orange on the neck with yellow.
(D) Glue part of the large penguin to bag "flap," matching dots with bag bottom fold. Cut along the dots and then glue bottom of penguin to bag, matching sides. Glue on "tail/feet strip," and then chick. Fit the chick's head under the flap and body on top of feet.
(E) Fold up a 1½ inch border under the feet. Glue cotton to border for snow.
FINISHED PUPPET
(Bottom fold)
1½" Border/Cotton

North Pole
Arctic
What Do We


Do in Winter?
South Pole
Antarctic

Winter Wildlife Trivia

[Fun to play with 3 teams or 3 individuals]

SETUP: Gameboard on pp. 28-29. Cut out "snowflake" game pieces pp. 24-25. (One snowflake per team or player.) Assemble "snowflake spinner," this page.

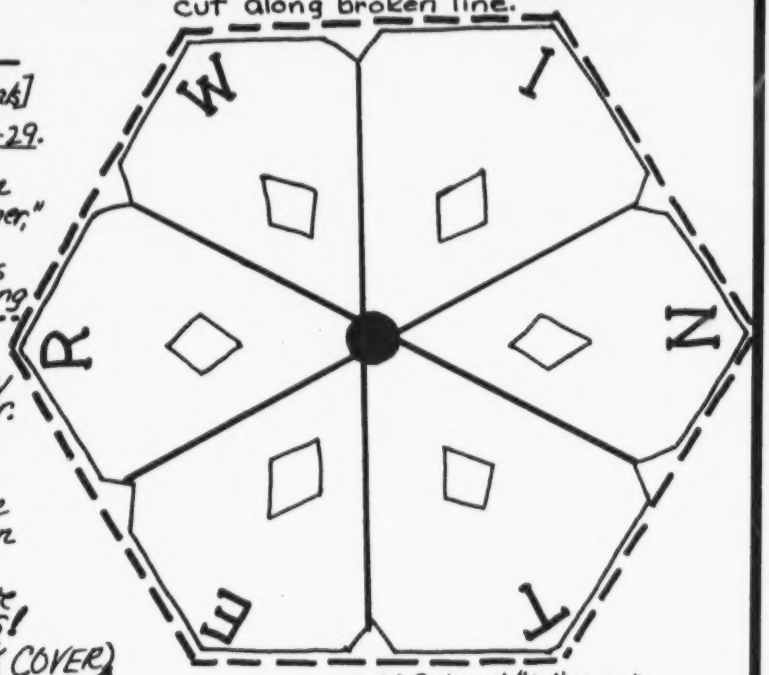
OBJECT OF GAME: To earn all sides of a six-sided snowflake by answering trivia questions in six categories...

W-I-N-I-E-R

TO PLAY: Questions are read by adult/teacher, as game leader. In turn, each player "spins" for a category question. If answered correctly, that category's letter is put in place in the player's snowflake. Turn is lost if player spins a category already earned. First team or player to complete all six sides of snowflake WINS!

(ANSWERS T/P GUIDE INSIDE BACK COVER)

cut along broken line.



(1) Cut out "Winter" snowflake along broken lines and glue to tagboard.

(2) Cut out "spinner" and attach to center "hole" of snowflake with brad fastener. Secure loosely to allow for spinning.

Questions

1	What is the other name for the North Pole? (p. 28)	In winter some animals will hibernate underground. True or false?	(Players use p. 23 to answer questions here.)
2	Winter white is worn by the Arctic Snowy Owl. Can you find it?	In the mud along the water's edge, two hibernators rest. Name them.	Name the famous butterfly migrator pictured on p. 29.
3	Why do you think the Arctic's Baby Harp Seal wears white?	It is best for cold-blooded snakes to hibernate under the ground? True or false?	Name the other insect migrator shown on p. 29.
4	What is the other name for the South Pole? (p. 29)	In winter, fish can live in three ways . . . they migrate, h_____ or remain active.	Name the ♂ and ♀ ducks shown on p. 29.
5	Where in the world is it dark during the winter? (pp. 28-29)	In winter chipmunks may curl up for a nap. Find the chipmunk.	Name the other bird migrators on p. 29.
1	The White Oak loses its leaves and seeds in winter. Can you find a White Oak tree stump?	Emperor Penguins are found in the_____. (p. 25)	Name the direction most migrators fly in fall?
2	The White Pine remains green all winter. Its seeds are hidden in pinecones count the cones, p. 28.	Eggs are laid by the Emperor Penguins in_____.	Running wild in winter the Arctic Fox wears white so as not to be seen. True or false?
3	The plants having hitchhiker seeds, catch on winter animals. How many of these plants are pictured on p. 28?	Emperor Penguins "waterproof" their feathers with _____. (p. 26)	Running away from animals, like the Arctic F_____, is how the Arctic Hare survives winter.
4	True or false? The coldest weather is found in the Antarctic. (p. 24)	Emperor chicks stand on their parents' _____. (p. 26)	Resting near her winter den with newborn cubs is the _____. (p. 28)
5	True or false? Emperor chicks are born in summer.	Emperor and other penguins eat "seafood." True or false?	Right or wrong? Snowflakes have six sides. (See game pieces.)
			Right or wrong? Tundra means "frozen land." (p. 24)

TEACHER/PARENT GUIDE

PICTURE THIS. . . (p. 2)

Answer Key: Penguins, nest, leaves, sing

SIGN UP FOR SCIENCE (p. 4)

The Nature Detective Badge is cut out along the solid black lines, including the upper part of the rabbit ears. The badge is then folded. The I.D. Card is also cut out, filled in as directed, and then glued inside badge, ready for the first nature assignment.

TRACKING DOWN WILD CARROT (pp. 5-7)

Answer Key: Card #1, page 6 at top, the wild carrot flower
Card #2, page 6 at bottom, insects on flowers
Card #3, page 7, dried flower with seeds, open in sunlight

A WILD WEED "BAD GUY" (pp. 8-9)

Answer Key: On page 9, children should color the tiny center flower purple and add hairs to the stem of the wild carrot.

WILD CARROT CONCENTRATION (pp. 10-11)

Play like Concentration card game, matching similar pairs. In the event Poison Hemlock Wild Card is turned up, player's turn ends. Player having the greater number of matched pairs **WINS!** NOTE: Wild carrot is pictured tightly closed on rainy day.

WILD ANIMAL ANSWER KEY (p. 14)

2-snake, 3-**squirrel**, 4-turtle, 5-snail, 6-frog, 7-**raccoon**, 8-chipmunk, 9-**mouse**, 10-opossum, 11-**woodpecker**, 12-**bear**, 13-fox, 14-W.C. Fields, 15-**fish**, 16-toad, 17-**deer**.

COUNT ME IN! (p. 15)

Answer Key: Wild Carrot-**6**, Burdock-**3**, Tic Trefoil-**2**, Beggar's-Tick-**4**, Poison Hemlock-**1**. NOTE: "Sticktights" is a popular term for Tic Trefoil and Beggar's-Tick seeds.

LOCATE THE CARROT SEEDS CARRIERS (p. 18)

Answer Key: Furry Animals—beaver, squirrel, raccoon, chipmunk, mouse, opossum, bear, fox, W.C. Fields, deer. Non-Furry—woodpecker, snake, frog, turtle, snail, fish, toad, insects (optional). Hitchhikers—Wild Carrot, Burdock, Tic Trefoil, Beggar's-Tick.

NATURE TELLS ITS AGE (p. 22)

Answer Key: Redwood—7 yrs.; White Pine—Year **three**, Year **four**; Fish—8 yrs., Turtle—5 yrs.

SKY WATCHING FALL FLYWAYS (p. 23)

Answer Key: ♀ Duck, ♂ Monarch, ♀ Monarch, ♂ Duck.

WINTER WILDLIFE TRIVIA (pp.30)

Answer Key:

W	I	N	T	E	R
1.Arctic	True	Monarch	On p. 28	Antarctic	True
2.On p. 28	Frog, turtle	Dragonfly	Seven	Winter	Fox
3.For hiding	True	Mallards	Six	Oil	Polar Bear
4.Antarctic	Hibernate	Snow Geese	True	Feet	Right
5.Arctic & Antarctic	On p. 28	South	False	True	Right

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